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AUTHOR Schwartz, Judy I.; Moffitt, Mary W.
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ABSTRACT

This document reports on the efforts of one teacher training program, the Early Childhood Integrated Year Program at Queens College, CUNY, to implement performance-competency-based teacher education (P-CBTE) with specific reference to the use of instructional modules as a strategy for developing competencies. The philosophy underlying the program at Queens College is described as one based on child development theory with heavy emphasis on humanistic goals. It is stated that the early childhood faculty, grouped into content area committees (language arts and reading, children's literature, social studies, mathematics, science, child development, and educational psychology), produced approximately 75 instructional modules, the purpose of which was to replace the material formerly conveyed through the education course sequence to preservice students. The modules in science and reading constitute the basis from which most of the findings in this paper are drawn. The paper describes the organization of the program, problems encountered in the transition from a traditional to a P-CBTE program, results of initial evaluation, and plans for the future. (JA)

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THE PLACE AND IMPACT OF MODULES IN A TEACHER EDUCATION PROGRAM

JUDY I. SCHWARTZ
MARY W. MOFFITT

INTRODUCTION

Like the Phoenix in all its resplendent beauty, Performance-Competency Based Teacher Education (P-CBTE) burst on the educational scene dazzling beholders with its double-barreled promise of bringing new vigor to the weak and vague aspects of teacher education, while, at the same time, making it accountable. So captivated with the princely delights of this emissary from the land of behaviorism, an increasing number of states are requiring P-CBTE programs for certification, and only 29 percent of the 783 teacher training institutions responding to a recent survey of the American Association of Colleges for Teacher Education indicated that they were not involved, in some way, with P-CBTE (5). While the Phoenix of ancient Egyptian legend lived 5 or 6 centuries before consuming itself in fire, the current P-CBTE movement, though still a relative neonate, is already meeting its own tests by fire (1), (2), (8).

This paper will report on the efforts of one teacher training program, the Early Childhood Integrated Year Program at Queens College, CUNY, to implement P-CBTE with specific reference to the use of instructional modules as a strategy for developing competencies. It will describe the procedures by which the program was initiated, the process of module use and revision, problems encountered in the transition from a traditional to a P-CBTE program, results of initial evaluation, and plans for the future.

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OBJECTIVES AND RATIONALE

The philosophy underlying the Early Childhood Program at Queens College is one based on child development theory with heavy emphasis on humanistic goals. It sees the child as the focal point from which all else evolves. The child may be likened to a pebble tossed into a brook. As the pebble strikes the water, ripples form around it. So, in our philosophy, the child is the central aspect with his needs and capacities shaping the curricula around himself. This, combined with the goal of developing an independent yet socialized being capable of functioning productively in a democratic society is the foundation of the early childhood rationale. How, then, could a program so heavily grounded on humanistic principles have adopted the P-CBTE model with its strong ties to behavioristic psychology?

For many years, the Queens College undergraduate early childhood program followed a fairly traditional pattern consisting of a series of discrete courses, two of which were the typical methods courses, and culminating in a student teaching experience. Prior to student teaching, contacts with the field were limited to participation experiences, a component of the methods courses, which consisted of several sessions of approximately two-hours duration, in addition to some field work experience which was part of the educational psychology courses. In essence, students received their theoretical and practical knowledge before they had any real opportunity to test this through contact with children in a school setting. Moreover, in the typical course structure, it was difficult to adapt instruction to meet the needs of individual students, or to utilize effectively the resources of different faculty. Thus, beginning in 1969 the Queens College early childhood faculty

initiated a series of planning sessions aimed at developing a program which would meet the following criteria: individualization of instructional components to meet the unique needs of our students; integration of the field component from the inception to the termination of the instructional sequence; and reorganization of the instructional process in order to utilize more effectively and economically the resources of faculty and supportive staff. To meet these criteria, it was necessary to analyze our learning components into functional and discrete categories. With the addition of behaviorally stated objectives for competencies to be acquired by our students, we had developed our own P-CBTE program. With its characteristics of concretizing and operationalizing what had been diffusely focused aspects in our former program, its personalization of instruction, and its integration of the field component, the program met our criteria without violating the tenets of our philosophy.

METHODS

a) Module construction. Through an intensive series of planning and work sessions held during the 1972-1973 academic year, the early childhood faculty, grouped into content area committees (language arts and reading, children's literature, social studies, mathematics, science, child development, and educational psychology) produced approximately 75 instructional modules, the purpose of which was to replace the material formerly conveyed through the education course sequence to our preservice students.

The basic pattern followed by the committees was: first, the perusal and evaluation of modules and similar material produced by other agencies and institutions (E.g., the Far West Regional Laboratory's Minicourses, the Michigan State University and Syracuse University material on modules);

second, the establishment of a model to be followed in the writing of the modules (It had been decided by the early childhood faculty as a whole that while the pattern of module components should be consistent within curriculum areas, some variation and modification would be beneficial. This would allow greater freedom for the individual module producer, and, hopefully, help to prevent boredom on the part of the module consumer); third, the listing and refining of behavioral objectives; fourth, the division of behavioral objectives into topics within each module area; and fifth, the construction of module components within each area (In general, this included a statement of objectives, a series of enabling activities, and related materials such as bibliographies, and in certain instances, supplementary equipment necessary for the completion of the activities within the module such as audio tape cassettes and sets of material for classification and seriation; some modules included pre- and postassessment components as well). Each curriculum committee served as a sounding and review board for the modules, so that part of each meeting was reserved for evaluating and refining material that had been produced. In addition, meetings of the early childhood faculty as a whole were regularly held to critique and revise the modules.

b) Program implementation. The transition from old to new program was effected through a two-fold operation: half of our enrolled students were permitted to finish their professional sequence in the traditional manner, while the other half, who would have regularly gone into their second methods course in the Fall 1972 semester, were held over until Spring 1973 when in one semester the methods course material and student teaching were combined into a special modular program. This phase-out, phase-in operation enabled both the field testing of modules, and the freeing of faculty, on a limited basis, for additional module writing.

There were two additional aspects to the implementation of this new program. Because the field component is considered a vital ingredient of the program, it was with great deliberation and effort that contacts were made with various school settings, and negotiations worked through with teachers and administrators on the school and district level. Moreover, two rooms on the Queens College campus, designated the Early Childhood Lab, underwent certain structural modifications (e.g., a doorway to make the rooms adjoining, provision of additional electrical outlets to accommodate more A-V equipment), and were equipped with materials tied to the activities within the modules. The room arrangement was designed to simulate early childhood classrooms.

c) The Early Childhood Integrated Year at Queens College. The program, as it is now constituted, is a one-year professional sequence. After certain introductory education courses are completed prior to entry into the program, the student spends his/her senior year completing the sequence. It is a full five-day week program which starts in the end of August with an orientation week and proceeds through the year (including intersessions) following the public school calendar to the end of May. The week is divided into halves, with the student spending half in the field, and the other half on campus in the Early Childhood Lab working through modules, with the instructional format typically being independent study, small group seminar, or individual cpnferencing between a faculty member and a student. There are generally two major field placements, one in the fall and one in the spring semester. In addition, there are special preschool modules which are completed at the Queens College Early Childhood Center, and the opportunity for additional

preschool placements in auxiliary field settings. Grade level placements range from preschool through third grade, with opportunities for visiting intermediate and upper grades. One faculty member is assigned as coordinator of each of the field settings. In addition to supervisory work in the field, each faculty member is assigned a number of students on the basis of his/her credit allotment in the program for whom he/she has instructional responsibilities. Thus, the faculty member's week is divided along the same lines as the students, working part time with students and school personnel in the field, and part time with students in the Early Childhood Lab.

DATA SOURCE

The modules in science and reading, being the most complete and the most heavily field tested to date, constitute the basis upon which findings are drawn. Each of these areas contains seven separate modules as follows:

SCIENCE

1. Introduction to Science Teaching - Establishing the Goals of Science Education
2. Learning to Set Up an Investigation
3. Scope and Sequence of Science Curricula
4. Developing Skills of Inquiry Through Classification, Seriation, and Transformations
5. Developing a Lesson Plan
6. Organizing Materials
7. Field Testing and Evaluation of Teaching Strategies

READING

1. Reading Readiness
2. What is Reading?
3. Decoding and Word Identification
4. Meaning and Interpretation
5. Reading Programs
6. Evaluation and Diagnosis
7. Oral Language and Oral Reading

The modules have been used by approximately 250 students beginning with the Spring 1973 semester. Process data come from three sources: students enrolled in the program; faculty involved in the writing and implementing of the modules; and the classroom teachers with whom our students are placed in their field settings. Systematic feedback from these three sources is an integral element of the program and is obtained formally through the administration of questionnaires and surveys, and informally through frequent discussions and conferences. Product data were obtained from the administration of a modified form of The Inventory of Teacher Knowledge of Reading to our students at the close of the Fall 1973 semester.

RESULTS

a) Process data. Feedback on modules from students, teachers, and college faculty involved in the Early Childhood Integrated Year Program from February 1973 through January 1974 reveals the following:

POSITIVE FACTORS

1. The immediate implementation of a concept covered in the module with children in a field setting.

   Excerpted student comment: "Doing this module was very enjoyable for me because I was in contact with children and found it very rewarding."

2. The heavy stress on learning by doing in the modules.

   Excerpted student comment: "The discovering and investigating for myself was really helpful."

   Excerpted student comment: "I believe I became able to look at things more accurately and describe things more precisely...."

   Excerpted student comment: "In comparison to the somewhat negative, fearful attitude which I had toward science before I began the modules, my feelings have changed significantly. As a result of working on the modules on my own, and having the opportunity to investigate through direct experimentation and independent research, I have begun to enjoy science, and have become less fearful of it."

3. The personalization of instruction through small seminars and individual conferences with faculty. Students comment favorably on the increased contact with faculty which is possible through small group work and conferencing. This tends to stimulate greater participation and discussion on the part of students, as well.

4. The individualization of instruction through alternative enabling activities within a module, different sequencing of modules, and options for selecting supplementary modules on the basis of interest and/or need.

5. The clarity and specificity of learning outcomes through stated behavioral objectives.
6. The statement of requirements at the beginning of the module permits an immediate assessment of the work necessary for module completion.
7. Strengthened and clarified grasp on a content area by the faculty member who was involved in the writing of a module.
8. Expertise of individual faculty member as it is embodied in a module is availab'e to a wider range of both students and fellow faculty members.
9. Increased opportunities for diagnosis of student learning through the inclusion of pre- and postassessment components.
10. Self-instructional components of the module permit greater flexibility in the faculty's allocation of time and resources.

NEGATIVE FACTORS

PROBLEMS ENCOUNTERED IN MODULES THEMSELVES

1. The module structure does not provide an overall paradigm of Early Childhood Education.
2. The module structure is guilty both of a sin of omission through its lack of a unifying element, and a sin of commission in that it is so content-laden, it tends to perpetuate the product-oriented philosophy of a didactic teaching model.
3. The increased specificity of learning outcomes and division of content stimulates fractionalization of the curriculum.
4. The module structure seems best suited for teaching easily identified skills, while it is ill-suited for teaching the higher order competencies which comprise much of what is important in teaching behavior.

5. The pre- and postassessment procedures can become mechanical processes which may be easily sabotaged, and which do not necessarily indicate anything about the student's real internalization of a concept.

PROGRAMMATIC PROBLEMS

1. The philosophical and operational mismatching between field and module approaches and activities as in the case of didactic science teaching stressed in the field setting, with the inductive approach emphasized in the module.
2. Logistical difficulties created by students reaching different points in the modules at different times. E.g., the scheduling of a seminar on a given topic becomes difficult to arrange.
3. The problem of arranging evaluation through overt performance in a field setting becomes unwieldy with so many students and so many competencies.
4. The greatly increased burden on the faculty through the intensification of work in the field, the instructional responsibilities related to modules, the writing and revising of modules, and the care and upkeep of the Early Childhood Lab. All of this must be seen within the context of other teaching and advisement responsibilities such as in the graduate program, the myriad professional obligations which are part of a professor's life in a liberal arts college, and the absence of additional personnel to assist in the carrying out of these responsibilities.

DIFFICULTIES ENCOUNTERED BY STUDENTS

1. Anxiety generated by the demands of both module assignments and responsibilities in field settings.

2. Difficulties adjusting to the structure of module assignments which occur in small increments regularly over time as contrasted to the two or three major assignments associated with traditional courses
3. Difficulties adjusting to the greater independence called for in the use of modules and to the need to alter learning styles, and to allocate time

b) PRODUCT DATA

In December 1973 a modified form of The Inventory of Teacher Knowledge of Reading was administered to 117 students enrolled in the Early Childhood Integrated Year Program. This same instrument had been administered at the end of the Spring 1973 semester to all elementary education students and to the early childhood students who were completing the old education sequence. Using a table of random numbers a sample of 30 answer sheets was drawn from each of the three populations: the current early childhood students enrolled in the Early Childhood Integrated Year Program; the former early childhood students who were enrolled in the old sequence; and former elementary education students. Following are the mean scores obtained by each of these comparison groups:

Current Early Childhood - 34.9

Former Early Childhood - 41.1

Former Elementary - 37.5

The following table gives the results of an analysis of variance to determine whether there were statistically significant differences among the three groups.

ANALYSIS OF VARIANCE SUMMARY TABLE OF SCORES OBTAINED ON THE INVENTORY OF TEACHER KNOWLEDGE OF READING

SOURCE	D.F.	S.S.	M.S.	F	P
BETWEEN GROUPS	2	581.0	290.5	9.534	.01
WITHIN GROUPS	87	2650.8	30.469		
TOTAL	89	3231.8			

Because the analysis of variance yielded a significant F ratio of 9.534 ($\leq .01$), the data were further analyzed with a Scheffé multiple comparisons test to determine which means were significantly different. This procedure found that the Former Early Childhood group scored significantly higher than the Current Early Childhood group, and the Former Elementary group.

DISCUSSION

In order to interpret accurately the results of the statistical analysis, several important factors must be considered. First, while both the Current Early Childhood group and the Former Elementary group were instructed by several different faculty members, the Former Early Childh ood group had only one instructor. Thus, the possibility that the results may reflect the effects

of the instructor rather than the treatment is a real one, particularly when one notes that the group receiving instruction by the one instructor was superior to both groups receiving instruction by a pool of faculty members. Second, whereas the Former Early Childhood group had completed their instruction in the teaching of reading in one semester, the modules on reading in the Early Childhood Integrated Year Program may be spread over two semesters. The ten instructors responsible for teaching in the new program indicated that no students had completed the reading modules at the time of the administration of the test; most were only halfway through them. Thus, a mean score of 34.9 may be considered high when it is seen as coming midway rather than at the conclusion of instruction. Finally, because both former groups were required to put their names on the answer sheets, and the Current Early Childhood group was not so required, it is conceivable that different degrees of motivation were operating in the groups which could have affected the scores. Therefore, while the statiscally significant differences does not lie in favor of the Current Early Childhood group, the consideration of these factors indicates their scores are favorable in comparison to the other groups.

Analysis of the process data on modules reveals both positive and negative factors which is to be expected in a program as new as this one. That the state of the art in module construction and use is still very much in its infancy is indicated by the increasing number of reports which testify to this fact. (6), (7). Moreover, modules are, by their very nature, in a state of continual change and modification. As Houston, et al, say "No module is ever completely developed: It is and must be in continual flux" (4). Indeed, this has been the experience of the early childhood faculty at Queens College. We look at our

program as one in process of developing. Our modules in the bare one and one-half years of their existence have undergone many revisions, and will undergo more as we come to understand their dynamics more clearly and strive to make their utilization more effective.

Perhaps the most significant by-product of this process has been the growth experienced by the early childhood faculty as it has struggled with the development of a new program. In addition to what each faculty member learned about subject matter content, the increased sense of camaraderie and cooperation among the faculty, the greater understanding of student needs and capacities, and the sense of commitment to a school, its children, teachers and administrators, have all contributed to this growth.

Growth implies learning, and learning necessitates change. So, there are a number of changes the early childhood faculty contemplates as it plans for the third year of its program. First, the modules have revealed much more so than the traditional course structure, the weaknesses in the liberal arts background of our students. They come to us with many flaws or gaps in knowledge. Thus, we are now in the process of petitioning the College for permission to establish liberal arts prerequisites to our program. We hope to be able to make prior experience working with young children a prerequisite, as well. Second, we are working on several strategies which would alter the program structure somewhat to permit an orientation to the philosophical underpinnings of the education of young children. For example, one plan involves the addition of a semester preceding the professional year which would include some field work plus minicourses designed to convey the rationale of early childhood education. Third, the increased incorporation into all modules of

those higher order competencies such as questioning strategies and diagnosis of pupil progress which are essential to the teaching act; Fourth, increasing the kinds of situations which permit the overt performance of a competency as, for example, through micro-teaching in a structured and simulated setting; Fifth, the upgrading of our field contacts. This means the evaluation of the school settings in which our students are placed; the dropping of those which are most out of synchronization with the objectives of our program, the cultivating of new ones, and the establishing of consortia in those settings where we hope to continue our relationship. Sixth, the continued building up and refining of a library of video-and audio-tapes to be used in conjunction with the modules; Seventh, the continued development and refinement of instruments such as coding systems to study the teaching behavior of our students; Eighth, the tooling up of research strategies for as Houston says, "Evaluation is not something which occurs at the end of the project but is integral to continued development...." (3). While we will concentrate on assessment of our students' performance and achievement, we hope to be able to implement an experimental study which will measure the achievement of the children taught by our students.

This paper began by likening P-CBTE to the legend of the Phoenix. It is apropos now to make the analogy complete. The most remarkable feat of the Phoenix was that out of the consuming fire it was reborn invigorated and refreshed. Likewise, out of the turbulence and the difficulties engendered by the creation of the Early Childhood Integrated Year at Queens College, came a strong and innovative program for our undergraduate students, and a faculty who are wiser and better prepared for having made the effort.

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